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(54) NETWORK-BASED SYSTEM AND METHOD FOR SUPPORTING COMMUNICATIONS BETWEEN A SENDER AND A RECEIVER UPON REQUESTS OF THE RECEIVER

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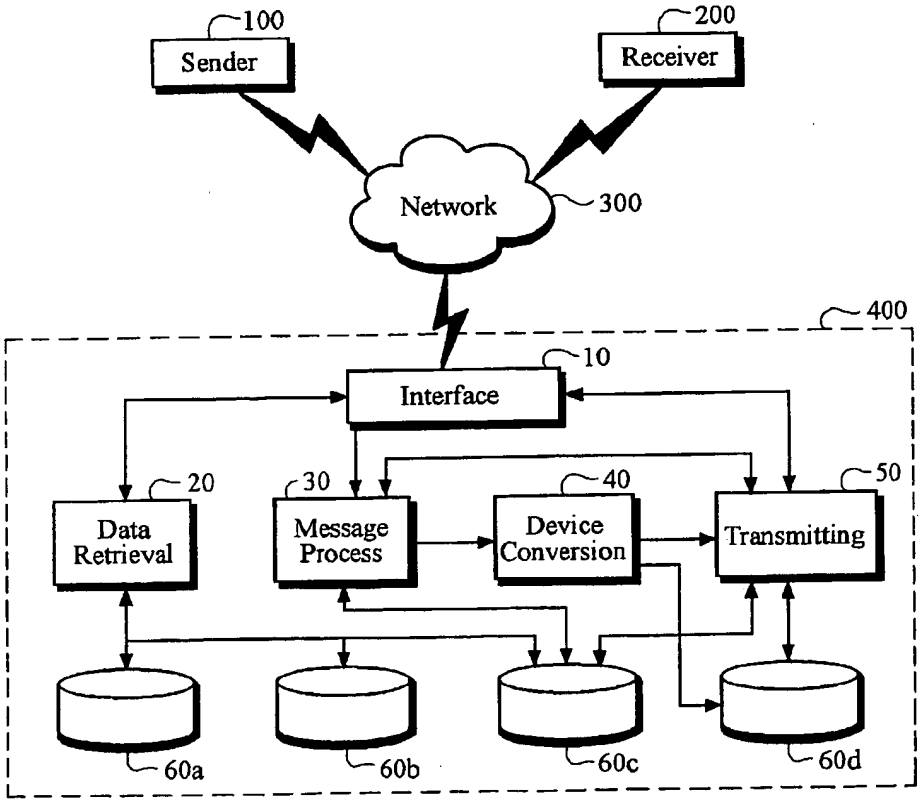
(57) ABSTRACT

Disclosed are a system and method for establishing communications between a sender and the receiver depending on requests of the receiver, which implemented by the steps of storing connection information for a plurality of communication channels, for communication with said receiver, with access to each of said channels predefined as private or public; providing the access information of said communication channels to a sender; and establishing a connection between the sender and the receiver if a channel selected by the sender is private.



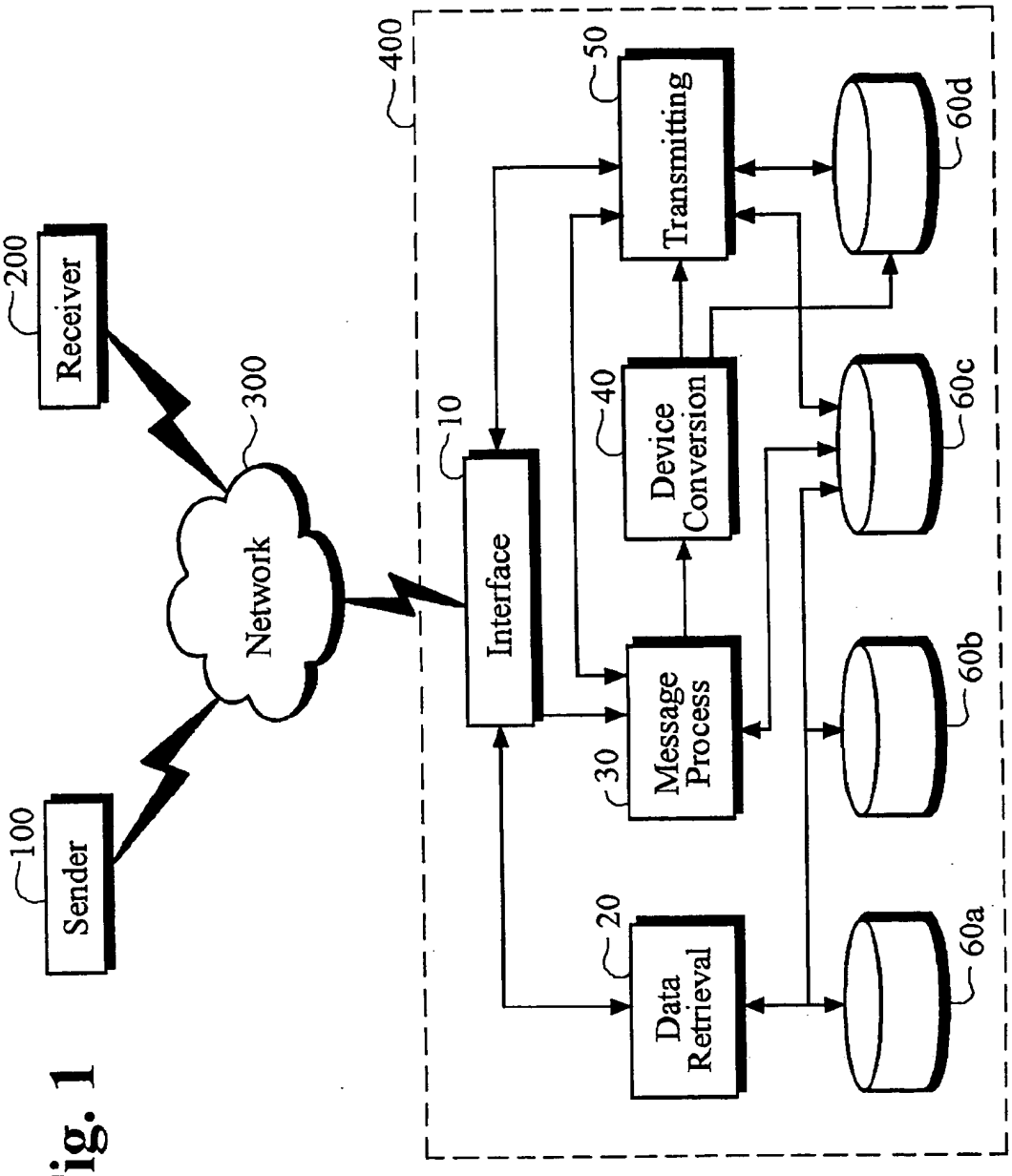

400
50
Transmitting
60d
200
Receiver
300
40
Device Conversion
60c
10
Interface
Network
30
Message Process
60b
100
Sender
20
Data Retrieval
60a

Fig. 1

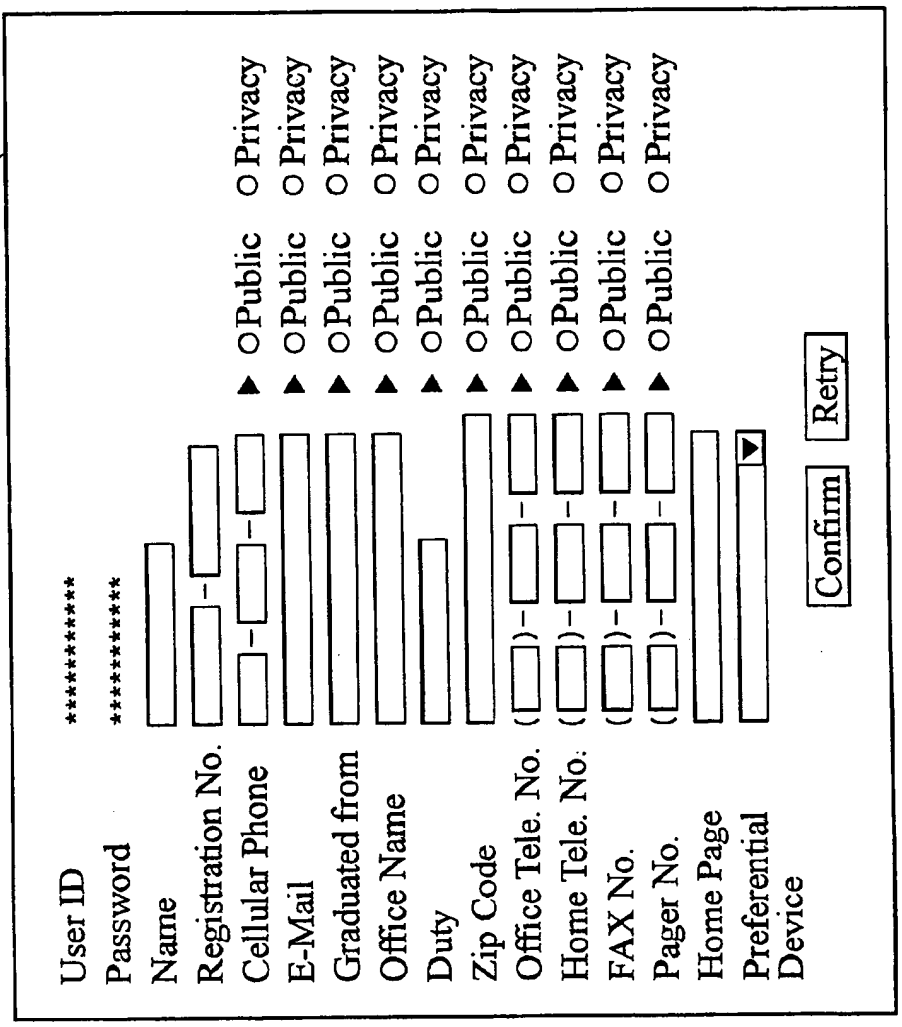

70
User ID
Password
Name
Registration No.
Cellular Phone
E-Mail
Graduated from
Office Name
Duty
Zip Code
Office Tele. No.
Home Tele. No.
FAX No.
Pager No.
Home Page
Preferential Device
Public
Privacy
Confirm
Retry

Fig. 2

Fig. 3A

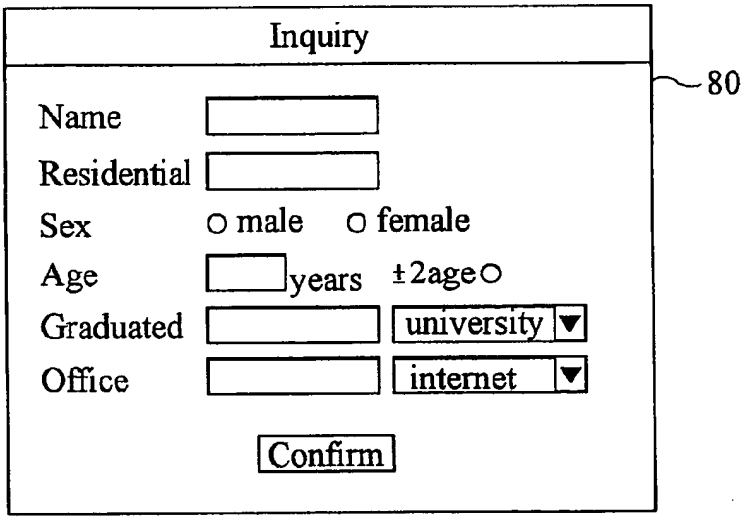

Inquiry
80
Name
Residential
Sex
male
female
Age
years
±2age
Graduated
university
Office
internet
Confirm

Fig. 3B

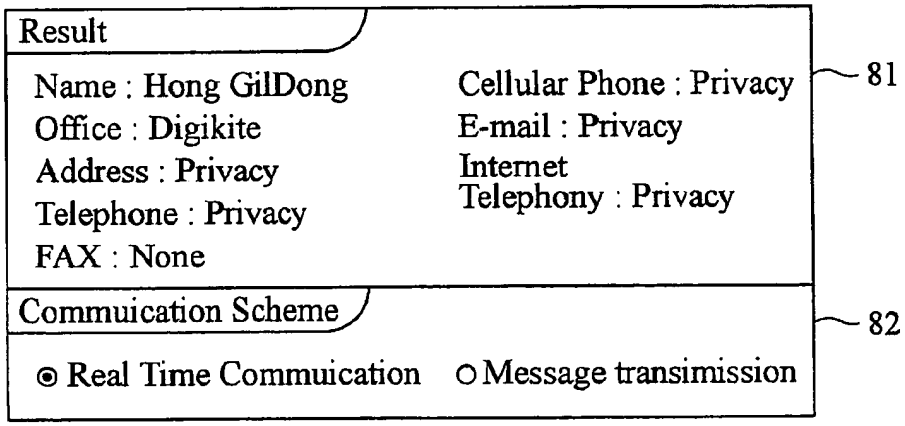

Result
Name : Hong GilDong
Office : Digikite
Address : Privacy
Telephone : Privacy
FAX : None
Cellular Phone : Privacy
E-mail : Privacy
Internet
Telephony : Privacy
81
Commuication Scheme
Real Time Commuication
Message transimission
82

Fig. 3C

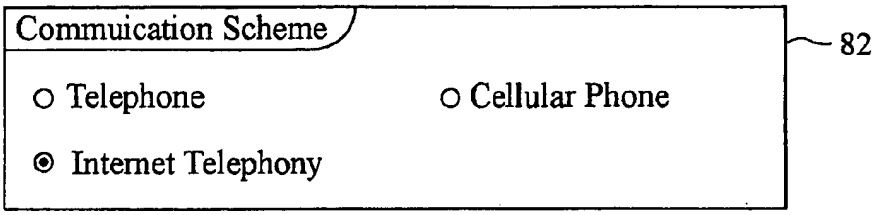

Commuication Scheme
82
Telephone
Cellular Phone
Internet Telephony

Fig. 3D

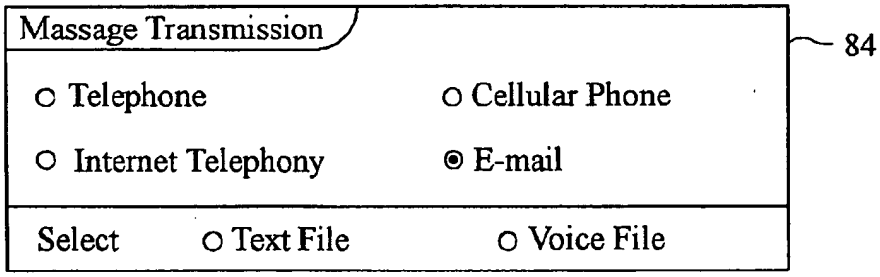

Massage Transmission
84
Telephone
Cellular Phone
Internet Telephony
E-mail
Select
Text File
Voice File

Fig. 4

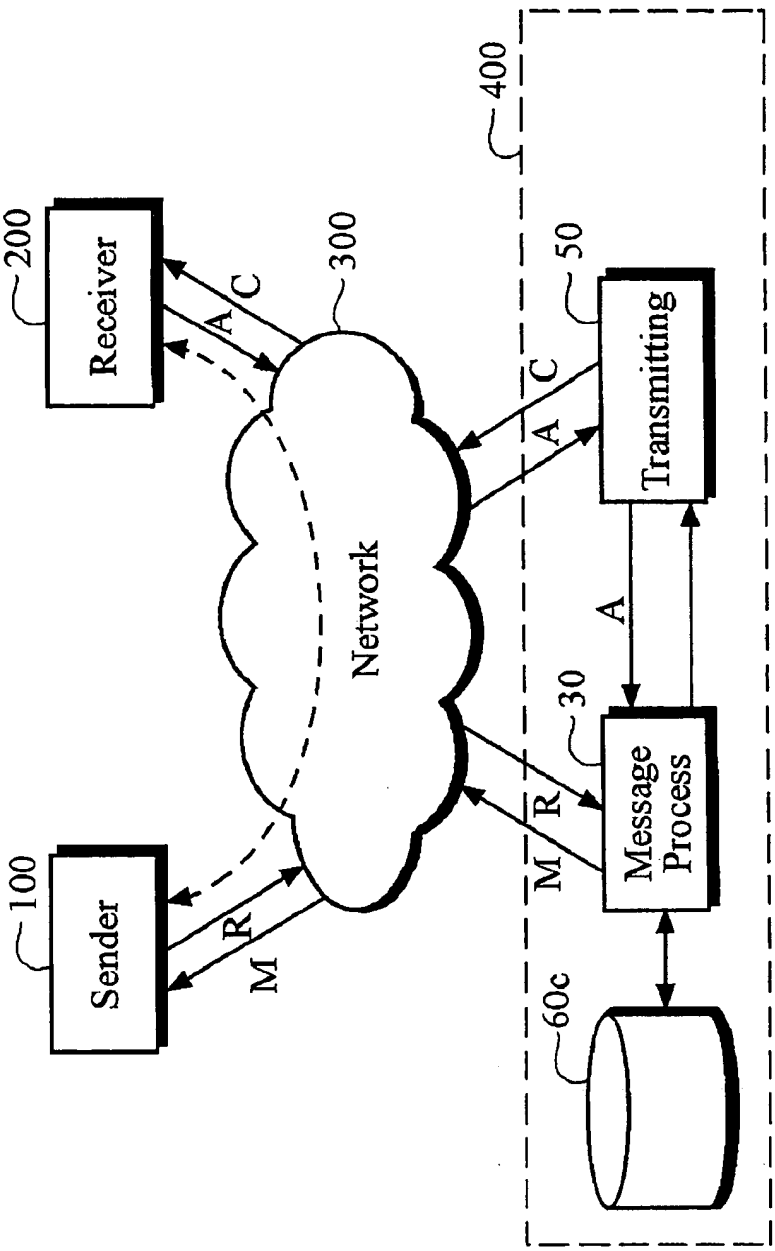

400
200
Receiver
A
C
300
50
Transmitting
Network
A
C
A
30
Message Process
R
M
M
R
100
Sender
60c

Fig. 5

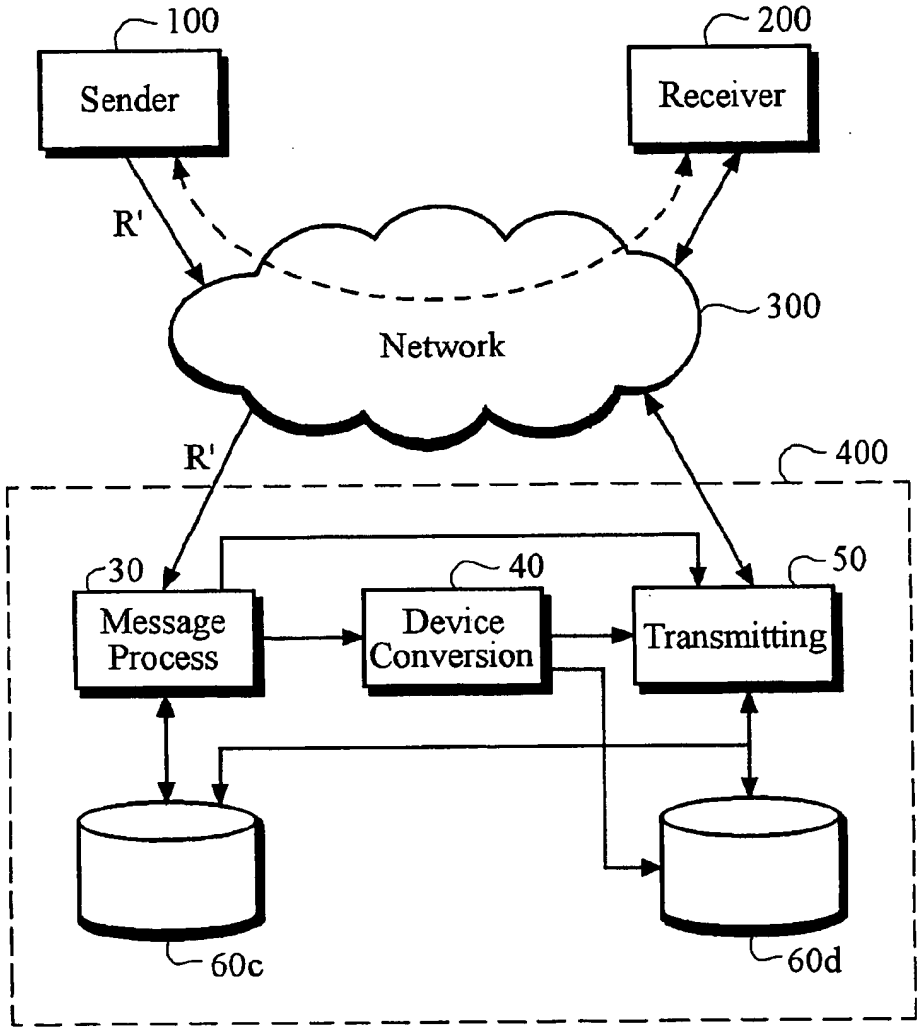

100
Sender
200
Receiver
R'
300
Network
R'
400
30
Message Process
40
Device Conversion
50
Transmitting
60c
60d

Fig. 6

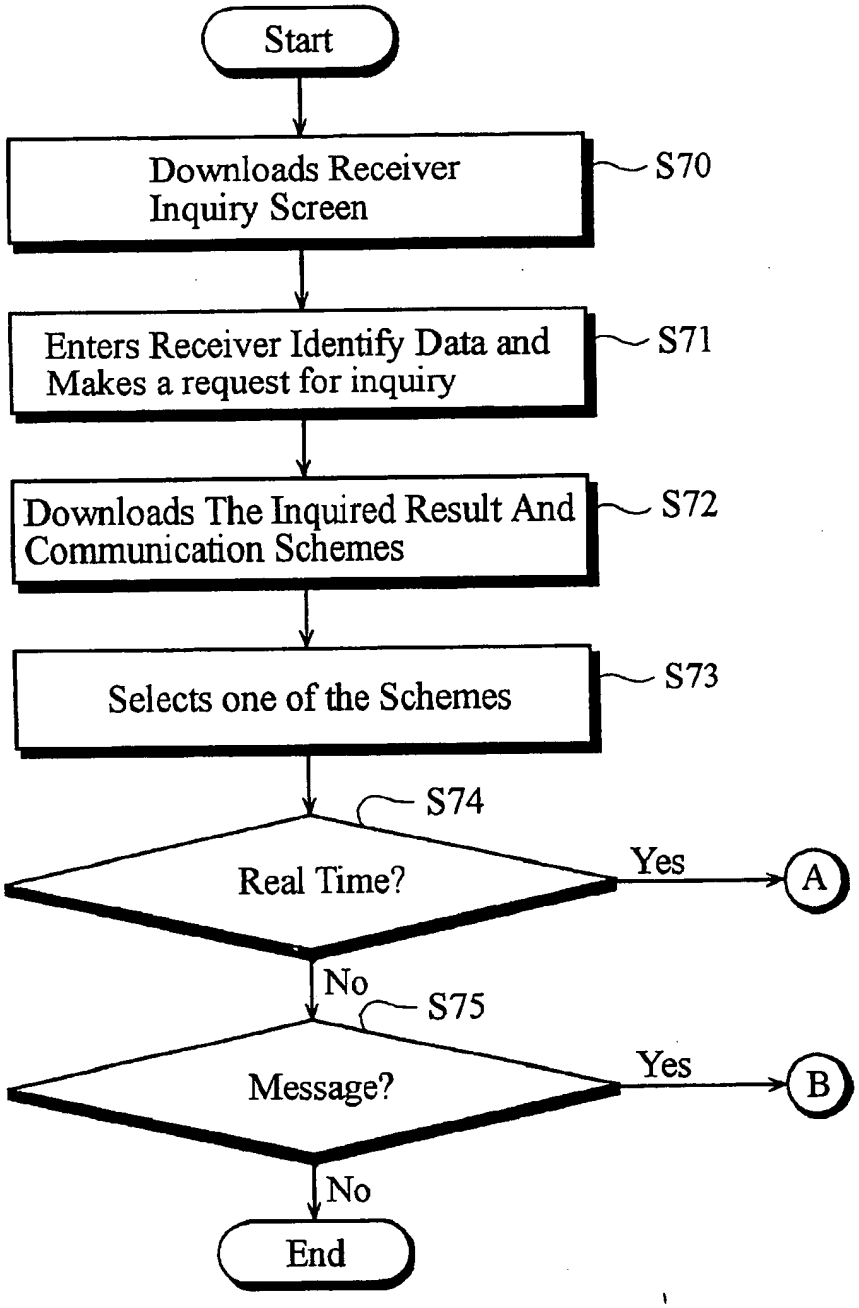

Start
Downloads Receiver Inquiry Screen
S70
Enters Receiver Identify Data and Makes a request for inquiry
S71
Downloads The Inquired Result And Communication Schemes
S72
Selects one of the Schemes
S73
S74
Real Time?
Yes
A
No
S75
Message?
Yes
B
No
End

Fig. 7

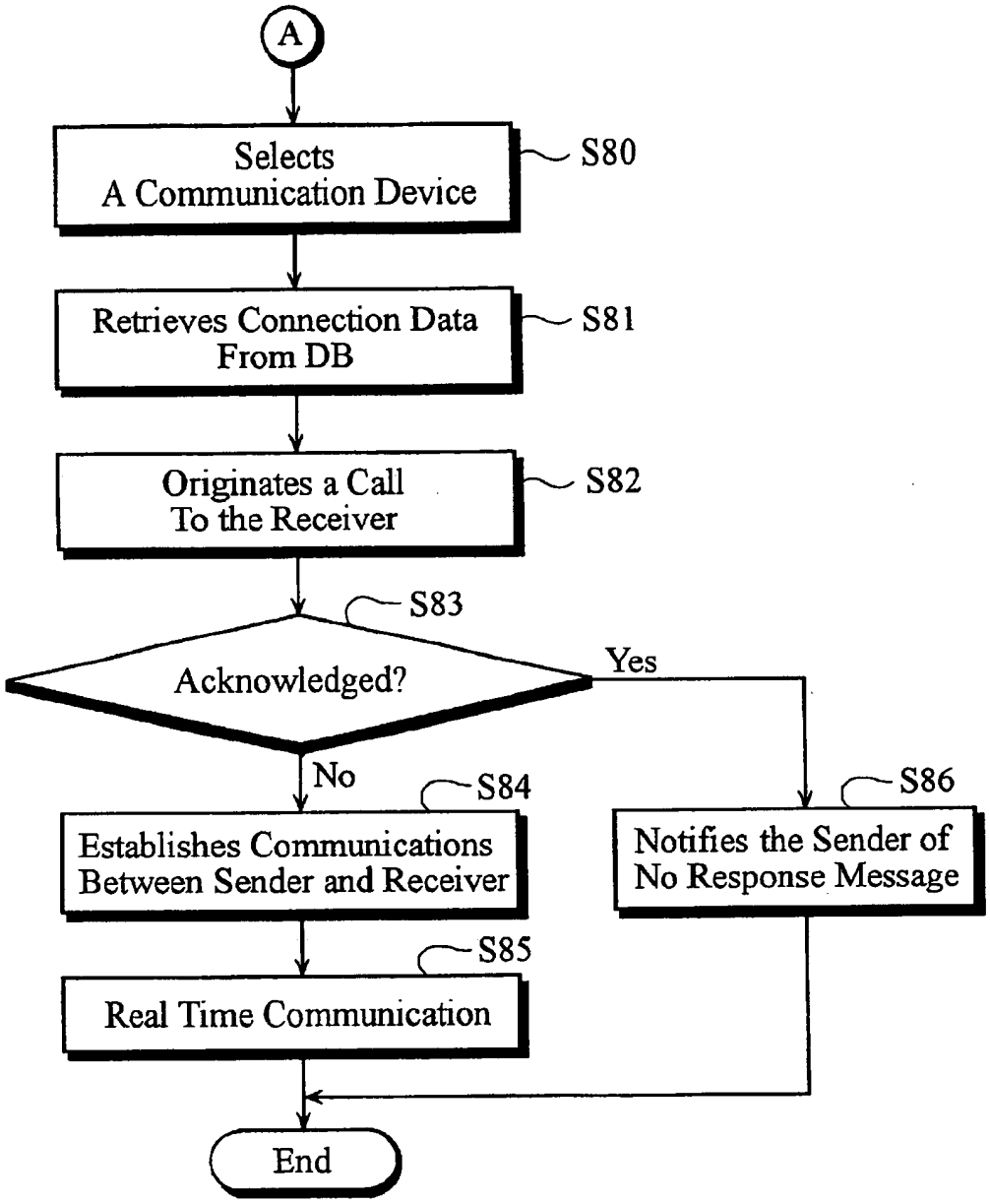

A
Selects A Communication Device
S80
Retrieves Connection Data From DB
S81
Originates a Call To the Receiver
S82
S83
Acknowledged?
Yes
No
S84
Establishes Communications Between Sender and Receiver
S85
Real Time Communication
S86
Notifies the Sender of No Response Message
End

Fig. 8

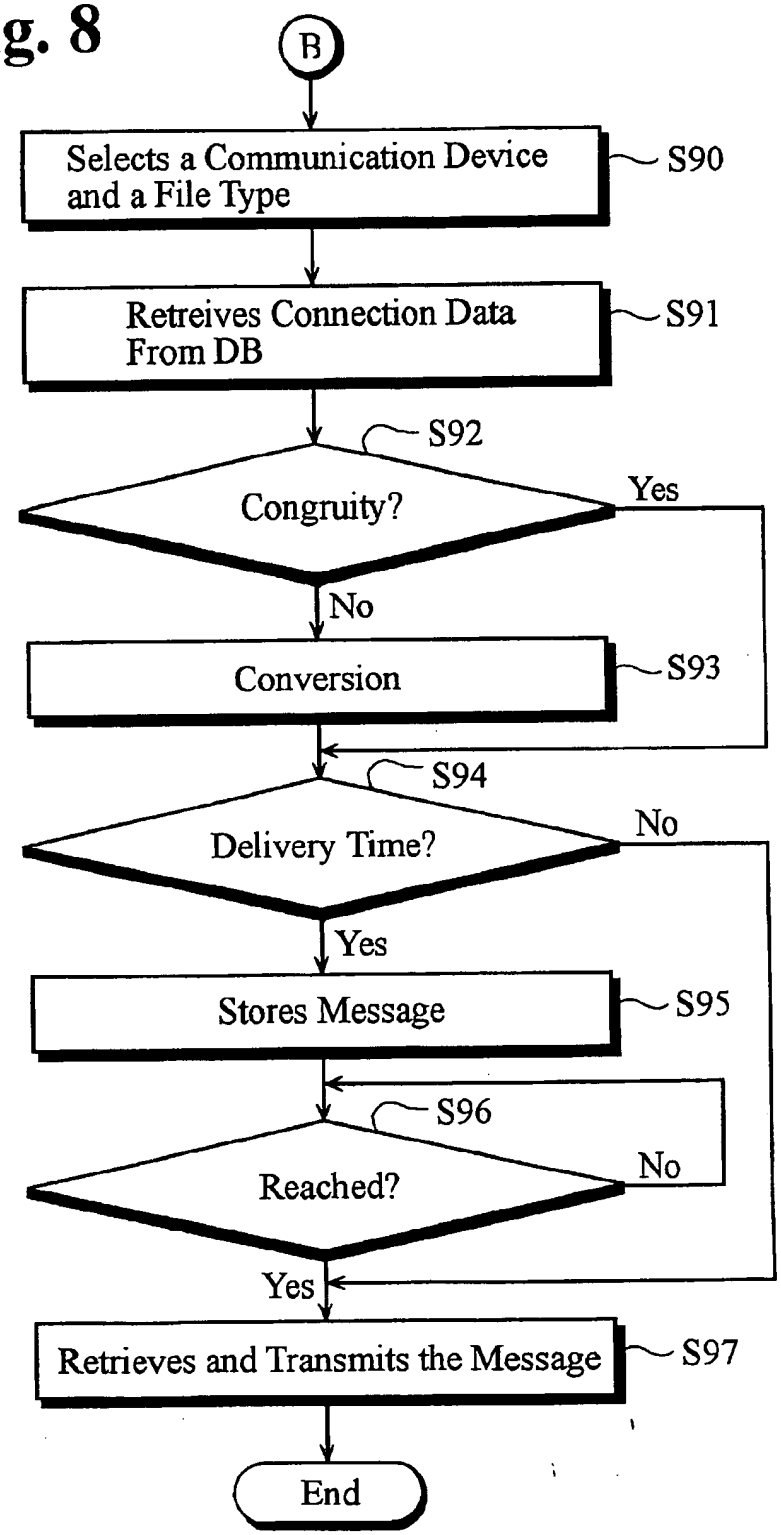
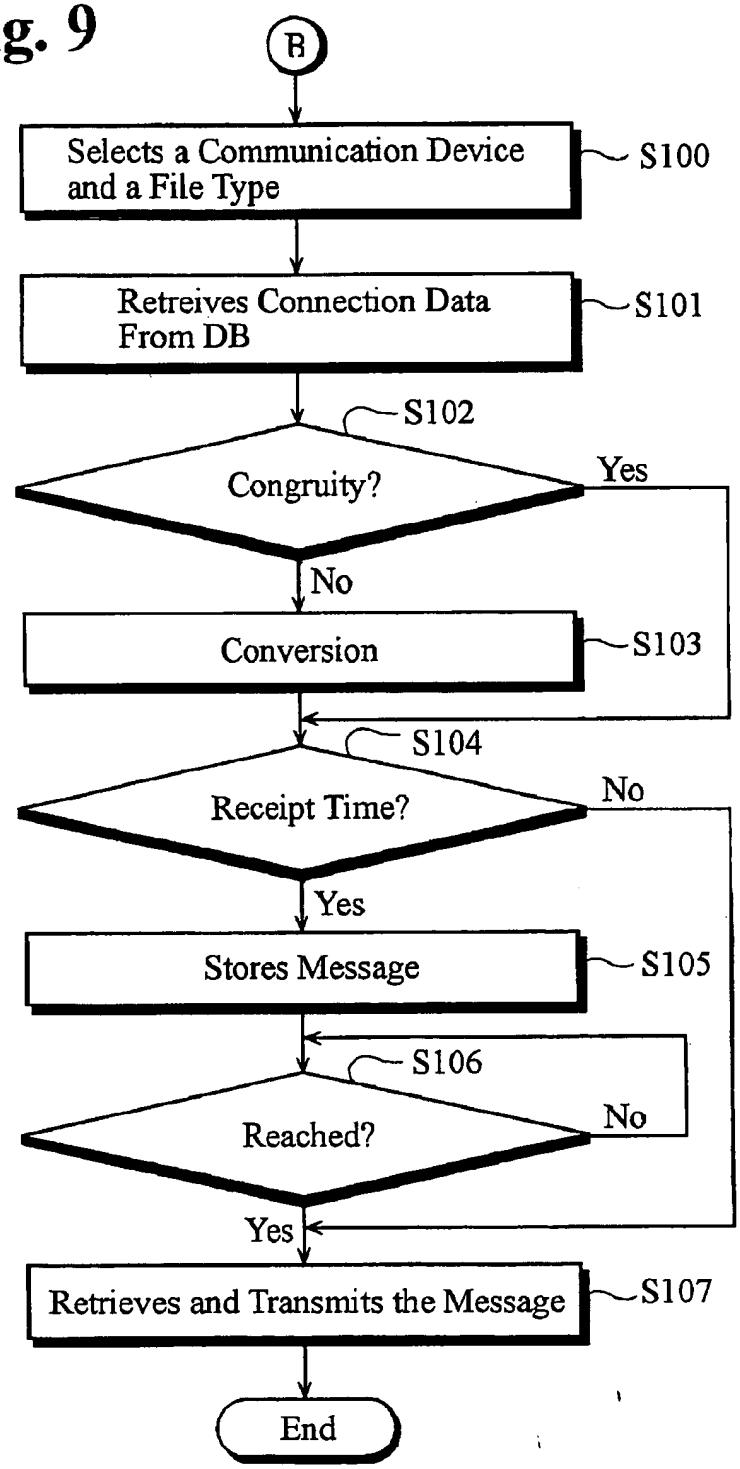

B
Selects a Communication Device and a File Type
S90
Retreives Connection Data From DB
S91
S92
Congruity?
Yes
No
Conversion
S93
S94
Delivery Time?
No
Yes
Stores Message
S95
S96
Reached?
No
Yes
Retrieves and Transmits the Message
S97
End

Fig. 9


B
Selects a Communication Device and a File Type
S100
Retreives Connection Data From DB
S101
S102
Congruity?
Yes
No
Conversion
S103
S104
Receipt Time?
No
Yes
Stores Message
S105
S106
Reached?
No
Yes
Retrieves and Transmits the Message
S107
End

NETWORK-BASED SYSTEM AND METHOD FOR SUPPORTING COMMUNICATIONS BETWEEN A SENDER AND A RECEIVER UPON REQUESTS OF THE RECEIVER

FIELD OF THE INVENTION

[0001] The present invention relates to a telecommunications system; and, more particularly, to a system and method for establishing communications between a sender and a receiver as predefined by the receiver so that the personal information of the receiver is kept confidential.

DESCRIPTION OF THE RELATED ART

[0002] Typically, a telecommunication system features a sender, a receiver and message to be transferred between them. The telecommunication is established when a communication device of the receiver responds to a call originated by the sender. Also, such establishment is achieved only when information associated with a telephone, cellular phone, Internet telephony, email or other communication device of the receiver is opened to the sender. Recently, personal information of clients (or subscribers) tends to be disclosed within limits to protect the privacy of the client and ensure communication privacy. Under such a circumstance, it is desirable to establish communications between the sender and the receiver depending on requests of the receiver, without publishing unwanted personal information of the receiver or adversely affecting the privacy of the receiver.

SUMMARY OF THE INVENTION

[0003] It is, therefore, a primary object of the present invention to provide a system and method which is capable of controlling communication information associated with a receiver to thereby establish communications between a sender and the receiver depending on requests of the receiver, without publishing unwanted personal information of the receiver or adversely affecting the privacy of the receiver.

[0004] In accordance with a preferred embodiment of the present invention, there is provided a system for selectively establishing communications between a sender and a receiver, which comprising: databases for storing connection information for a plurality of communication channels, for communication with said receiver, with access to each of said channels predefined as private or public; a means for providing the access information of said communication channels to a sender; and means for establishing a connection between the sender and the receiver if a channel selected by the sender is private.

BRIEF DESCRIPTIONS OF THE DRAWINGS

[0005] The above and other objects and features of the present invention will become apparent from the following description of preferred embodiments given in conjunction with the accompanying drawings, in which:

[0006] **FIG. 1** is a schematic block diagram of a system for establishing communications between a sender and a receiver depending on requests of the receiver, in accordance with a preferred embodiment of the present invention;

[0007] **FIG. 2** is a diagram of a screen to be downloaded to the client computer during sign-up;

[0008] **FIG. 3A** is an explanatory receiver inquiry screen which is downloaded to the sender from the system of the present invention;

[0009] **FIG. 3B** is an explanatory screen displayed thereon the inquired result which is transmitted to the sender;

[0010] **FIG. 3C** is an explanatory screen of private communication devices to be provided to the sender;

[0011] **FIG. 4** is a schematic block diagram illustrating a real-time communication scheme in accordance with the present invention;

[0012] **FIG. 5** is a schematic block diagram illustrating a message transmission scheme in accordance with the present invention;

[0013] **FIG. 6** is a flow chart set forth a procedure, which a sender connects to the inventive system to communicate with a wanted receiver;

[0014] **FIG. 7** is a flow chart set forth the real-time communication scheme in accordance with the present invention;

[0015] **FIG. 8** is a flow chart set forth the message transmission scheme in accordance with another preferred embodiment of the present invention; and

[0016] **FIG. 9** is a flow chart illustrating a message transmission scheme in which message receipt time data is previously set, in accordance with another preferred embodiment of the present invention.

DETAILED DESCRIPTION OF THE PRESENT INVENTION

[0017] **FIG. 1** is a block diagram of a system, in accordance with a preferred embodiment of the present invention, for establishing communications between a sender and a receiver as predefined by the receiver.

[0018] The system **400** establishes communications between a sender communication device **100** and a receiver communication device **200** via a network **300** such as the Internet, according to conditions predefined by the receiver. The sender and receiver communication devices **100** and **200** may be a telephone, facsimile, cellular phone, computer-based Internet telephony or E-mail, although it is not limited thereto. The network **300** may be a wired or wireless Internet or a value added network (VAN) connecting between the sender and receiver communication devices **100** and **200**, although it is not limited thereto.

[0019] A preferred embodiment of the present invention based on the Internet will be described referring to Fig.1.

[0020] The system **400** comprises an interface **10**, a data retrieval block **20**, a message process block **30**, a device conversion block **40**, a transmitting block **50** and a multiplicity of databases **60***a*, **60***b*, **60***c* and **60***d*.

[0021] In case a client wishes to sign up to the web site of the present invention using his or her own personal computer, the web site forwards a screen **70** to the client computer via the network **300** to thereby allowing the client to enter his or her own personal information thereon.

[0022] **FIG. 2** is a diagram of the screen to be downloaded to the client computer during sign-up.

[0023] As shown in **FIG. 2**, the client enters on corresponding section in the screen **70** his or her own identification data, password, name, cellular phone number, E-mail address, graduated from, company name, zip code, telephone number, facsimile number of his or her office, the duty, telephone number and zip code of his or her home, or other communication information, by using a data input device such as a keyboard. In accordance with the present invention, such information may be set in a "public mode" or a "privacy mode" upon the selection of the client. Wherein, the public mode means that the client permits his or her own personal information to be published, and the privacy mode means that the client don't want to be published his or her own personal information.

[0024] Upon the entry of the personal information and the setting of the public mode or the privacy mode to each communication device, a confirmation button "Confirm" provided on the screen **70** is struck to terminate the sign up procedure.

[0025] Referring back to **FIG. 1**, the first database **60***a* stores thereon a multiplicity of client (subscriber) identify information each having an identification, password and name associated with each client. The second database **60***b* stores thereon a multiplicity of communication information each having the number of a telephone, cellular phone, facsimile or Internet telephony which each subscriber uses as a communication device, a public mode (or the privacy mode) specified to each communication device, a preferential one among the communication devices and the like. The third database **60***c* stores thereon connection data corresponding to each of the communication devices. The fourth database **60***d* stores thereon message transmitted to the system **400** from the sender communication device **100**.

[0026] If the sender communication device **100** connects to the system **400** via the network **300**, the interface **10** senses a transfer protocol of the sender communication device **100** and converts it to a protocol that is adapted to use in the system **400** of the present invention. The interface **10** also serves to convert message to be outputted therefrom into a format that is adapted to use in the receiver communication device **200**.

[0027] When the sender communication device **100** connects to the web site employing the system **400** via the network **300**, the system **400** forwards a screen for inquiring a receiver with which the sender wants to communicate to the sender communication device **100** via the interface **10** and the network **300**.

[0028] **FIG. 3A** is an explanatory receiver inquiry screen which is transmitted from the system **400** of the present invention. As shown in **FIG. 3A**, the receiver inquiry screen **80** is provided with a multiplicity of sections to be entered basic information for the wanted receiver, including a name, residential district, sex, age, education and office of the wanted receiver, although it is not limited thereto.

[0029] Thereafter, if the sender enters corresponding data on each section and strikes a "confirm" button provided on the receiver inquiry screen **80**, a request for the receiver inquiry is transmitted to the data retrieval block **20** in the system **400** via the network **300**.

[0030] In response to the request originated by the sender, the data retrieval block **20** retrieves the identify information, the public and privacy modes for each communication device, and connection data assigned to each of the communication devices which correspond to the wanted receiver from the databases **60***a*, **60***b* and **60***c*, respectively; and forwards a screen on which the inquired result is displayed to the sender communication device **100** via the network **300**.

[0031] **FIG. 3B** is an explanatory screen displayed thereon the inquired result which is transmitted to the sender.

[0032] In **FIG. 3B**, the screen **81** displays the resultant data including an address, telephone number, cellular phone number, E-mail address, Internet telephony number of the inquired receiver, each of which is specified in the privacy mode. In addition, the system **400** of the present invention provides a communication menu such as a real-time communication scheme and a message transmission scheme to the sender, to thereby allow the sender to select one of the schemes, if desired.

[0033] Specifically, in case the sender wishes to communicate with a receiver in a real-time through one of the private communication devices, the sender first selects the real-time communication scheme on the menu. Then, the system **400** provides information of the private communication devices to the sender as shown in **FIG. 3C**. The sender chooses a wanted one of the communication devices specified in the privacy mode, e.g., the Internet telephony, and makes a request for the real-time communication with the receiver.

[0034] **FIG. 4** is a schematic block diagram illustrating the real-time communication scheme in accordance with a preferred embodiment of the present invention.

[0035] As shown in **FIG. 4**, when a request R for the real-time communication using the Internet telephony is originated by the sender communication device **100**, the message process block **30** of the system **400** retrieves a connection number corresponding to the Internet telephony of the receiver from the third database **60***c* and passes it to the transmitting block **50**. The transmitting block **50** may be, e.g., a mail server, which originates a call C for determining if the Internet telephony of the receiver is being in a receiveenable state, based on the connection number fed thereto from the message process block **30**.

[0036] If an acknowledge signal A is received from the sender by the transmitting block **50** within a predetermined time period, the transmitting block **50** directs it to the message process block **30**. In response to the acknowledge signal A, the message process block **30** determines that the Internet telephony of the receiver is being in a receive-enable state, to allow the sender and the receiver to communicate with each other through the network **300**, as indicated by a dotted line in **FIG. 4**. Otherwise, the message process block **30** determines that the Internet telephony of the receiver is being in a receive-disable state, and notifies the sender of message M indicating the receive-disable state of the receiver.

[0037] By using the real-time communication scheme discussed above, the present invention has the ability to support a one-to-one communication, voice over Internet

protocol (VoIP) and chatting between the sender and the receiver, without disclosing the personal information associated with the receiver.

[0038] **FIGS. 3D and 5** are schematic block diagrams illustrating the message transmission scheme in accordance with another preferred embodiment of the present invention.

[0039] If the sender wishes to transmit a message to the receiver through one of the private communication devices, the sender selects the message transmission scheme on the menu. Then, the system **400** provides the private communication devices to the sender as shown in **FIG. 3C**. The sender chooses a wanted one among the private communication devices, e.g., E-mail. Next, the sender writes a message to be transmitted to the receiver using a data entry device such as a keyboard, and make a request for the message transmission. As shown in **FIG. 3D**, options of the message may include a text file or voice file.

[0040] Specifically, as shown in **FIG. 5**, if a request R' for the message transmission from the sender is received by the message process block **30**, it retrieves E-mail address data corresponding to the receiver from the third database **60***c*, and relays the same together with the message to the transmitting block **50** or the device conversion block **40**. In this case, direct relay of the message to the transmitting block **50** represents that the sender communication device **100** and the receiver communication device **200** are in congruity with each other.

[0041] When the sender communication device **100** is in incongruity with the receiver communication device **200**, the device conversion block **40** converts the message from the sender to the format of a communication device required by the receiver. The message includes an email, voice mail, short message, facsimile, or the like. The message conversion includes a TTS (Text to Speech), STT (Sound to Text), TTF (Text to Facsimile), or the like, although it is not limited thereto. The message processed by the device conversion block **40** is relayed to the transmission block **50**.

[0042] The transmission block **50** transmits the message fed directly thereto from the message process block **30** or the message processed at the device conversion block **40** to the receiver communication device **200** via the network **300**.

[0043] In accordance with the present invention, options include a scheduling and delivery of message, and a scheduling and reception of message. That is, the sender may set a desired message delivery time and the receiver may set a desired message receipt time. If the message delivery time data is included in a message, the transmission block **50** temporarily stores the message from the message process block **30** or the message from the device conversion block **40** in the fourth database **60***d*. At the message delivery time, the transmission block **50** retrieves the message from the fourth database **60***d* and initiates delivery of the message to the receiver. Further, if the message receipt time data has been previously set in the system **400**, the transmission block **50** temporarily stores the message from the message process block **30** or the message from the device conversion block **40** in the fourth database **60***d*. Thereafter, at the message receipt time, the transmission block **50** retrieves the message from the fourth database **60***d* and initiates delivery of the message to the receiver. As is well known, the receiver can connect to the transmission block **50** of the present invention by a typical login procedure to access to the message stored in the fourth database **60***d*.

[0044] FIGS. **6** to **9** are flowcharts set forth a procedure, which a sender connects to the inventive system to communicate with a wanted receiver.

[0045] At step **S70**, if a connection between the sender and the inventive system **400** is established through a telephone, cellular phone, Internet telephony or other communication device, the system forwards the receiver inquiry screen **80** as shown in **FIG. 3A** to the sender.

[0046] At step **S71**, the sender enters receiver identify data on each section in the screen **80** and transmits a request for inquiry of the receiver to the system **400**.

[0047] Upon the receipt of the request, at steps **S72** and **S73**, the control process retrieves the identify information and the public and privacy modes for each communication device, which correspond to the wanted receiver, from the databases **60***a* and **60***b* shown in **FIG. 1**, respectively; and forwards the inquired result together with the communication schemes including a real-time communication and a message transmission to the sender communication device **100**, to thereby allow the sender to select one of the schemes. If there is a public communication device on the inquired result, the sender may directly originate a call using the public communication device to the receiver.

[0048] At step **S74**, the control process determines if the real-time communication scheme is selected. Being selected, the process proceeds to **FIG. 7** via tap A wherein the real-time communication procedure is prosecuted. On the one side, Being selected the message transmission scheme at step **S75**, the process proceeds to **FIG. 8** via tap B wherein the message transmission procedure is prosecuted.

[0049] **FIG. 7** is a flow chart set forth the real-time communication scheme in accordance with the present invention.

[0050] At step **S80**, the sender selects one of the private communication devices, e.g., the Internet telephony, to make a request for the real-time communication with the receiver.

[0051] In response to the request, at step **S82** the process retrieves connection data corresponding to the Internet telephony of the receiver from the third database **60***c*, and originates a call to the receiver based on the connection data.

[0052] A decision is made at step **S83** to determine whether or not an acknowledge signal from the sender is received within a predetermined time period. When acknowledged, at step **S84** the process determines that the receiver communication device **200** is in a receive-enable state, and allows communications between the sender communication device **100** and the receiver communication device **200** to be established. Thus, at step **S85** the sender can communicate with the receiver in a real-time. On the other hand, when no acknowledged, the process goes to step **S86** which determines that the receiver communication device **200** is in a receive-disable state, and notifies the sender **100** of no response message indicating the receive-disable state.

[0053] **FIG. 8** is a flow chart set forth the message transmission scheme in accordance with another preferred embodiment of the present invention.

[0054] At step S90, the sender chooses one of the private communication devices, e.g., email, and then selects a type of message file to be transmitted to the receiver there through. Thereafter, the sender makes a request for the message transmission. The type of the message file may include at least one of a text, voice and dynamic picture image files.

[0055] In an ensuing step, the process, in response to the request, retrieves email address data corresponding to the receiver from the third database **60***c* at step S91, and checks whether or not the sender communication device **100** is in congruity with the receiver communication device **200** at step S92. If the checked result is NO, the process converts a transfer protocol of the sender communication device **100** to a protocol that is adapted to use in the email, to process the message from the sender.

[0056] Specifically, if the sender communication device **100** is a cellular phone having an Internet access function and the receiver communication device **200** is a computer, the process converts a message including a voice mail, short message and the like produced by the cellular phone into, e.g., a voice, text or facsimile format which the receiver can receive. The message conversion includes a TTS, STT, TTF, or the like, although it is not limited thereto. Meanwhile, if at step S92 the checked result is YES, the process goes to step S94 which checks if message delivery time data has been contained in the received message. If at step S94 the checked result is YES, at step S95 the process temporarily stores the message from the sender in the fourth database **60***d* and goes to step S96 wherein a decision is made to determine if the message delivery time is reached. At the message delivery time, at step S97 the process retrieves the message from the fourth database **60***d* and initiates delivery of the message to the receiver.

[0057] **FIG. 9** is a flow chart illustrating a message transmission scheme in which message receipt time data is previously set, in accordance with another preferred embodiment of the present invention. In **FIG. 9**, steps S100 to S103 are similar to steps S90 to S93 shown in **FIG. 8**, and therefore a further description thereof is omitted herein.

[0058] A decision is made at step S104 to check if the message receipt time data has been set. If the checked result is YES, the process goes to step S105 wherein the message from the sender is temporarily stored in the fourth database **60***d*. After that, a decision is made at step S106 to check if the message receipt time is reached. When reached, at step S107 the process retrieves the message from the fourth database **60***d* and initiates delivery of the message to the receiver.

[0059] Further, the receiver connects the system **400** of the present invention through a typical login procedure if desired, to access message stored in the fourth database **60***d*.

[0060] As demonstrated above, the present invention allows a receiver to selectively set his or her own communication information to be public or private, thereby establishing communications between an originator and the receiver, without publishing any unwanted personal information of the receiver or affecting communication privacy of the receiver.

[0061] While the present invention has been described and illustrated with respect to a preferred embodiment of the invention, it will be apparent to those skilled in the art that variations and modifications are possible without deviating from the broad principles and teachings of the present invention which should be limited solely by the scope of the claims appended hereto.

What is claimed is:

1. A system for selectively establishing communications between a sender and a receiver, comprising:

means for storing connection information for a plurality of communication channels, for communication with said receiver, with access to each of said channels predefined as private or public;

means for providing the access information of said communication channels to a sender; and

means for establishing a connection between the sender and the receiver if a channel selected by the sender is private.

2. The system of claim 1, wherein the communication channels include a telephone, facsimile, cellular phone, Internet telephony and email communication.

3. The system of claim 2, wherein the connection information includes the unique identification of each of the communication channels.

4. The system of claim 1, which further comprises means for changing a communication protocol if a communication channel to the system from the sender is different from the selected communication channel from the system to the receiver.

5. The system of claim 4, wherein the establishing means includes:

means for determining if the receiver is able to communicate through the selected channel.

6. The system of claim 5, wherein the establishing means further includes:

means for converting a message type from the sender into a message type recognized by the receiver.

7. The system of claim 6, wherein said message includes a text or voice file.

8. The system of claim 6, wherein the establishing means further includes:

a first storing means for storing a message delivery time included in said the message; and

means for retrieving and transmitting said message at said message delivery time.

9. The system of claim 8, wherein the establishing means further includes:

a second storing means for storing a message receipt time included in the message; and

means for extracting and transmitting said message at said message receipt time.

10. A method for selectively establishing communications between a sender and a receiver, comprising the following steps of:

(a) storing connection information for a plurality of communication channels, for communication with said receiver, with access to each of said channels predef ined as private or public;

(b) providing the access information of said communication channels to a sender; and

(c) establishing a connection between the sender and the receiver if a channel selected by the sender is private.

11. The method of claim 10, wherein the communication channels include a telephone, facsimile, cellular phone, Internet telephony and email communication.

12. The method of claim 11, wherein the connection information includes the unique identification of each of the communication channels.

13. The method of claim 10, further comprising the step of changing a communication protocol if a communication channel to the system from the sender is different from the selected communication channel from the system to the receiver.

14. The method of claim 13, wherein said step (c) includes the step of determining if the receiver is able to communicate through the selected channel.

15. The method of claim 14, wherein said step (c) further includes the step of converting a message type from the sender into a message type recognized by the receiver.

16. The method of claim 15, wherein said message includes a text or voice file.

17. The method of claim 15, wherein said step (c) further includes the steps of:

(c1) storing a message delivery time included in said the message; and

(c2) retrieving and transmitting said message at said message delivery time.

18. The method of claim 17, wherein said step (c) further includes the step of:

(c3) storing a message receipt time included in the message; and

(c4) extracting and transmitting said message at said message receipt time.

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